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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/796,228

03/09/2004

Darwin Mitchel Hanks

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EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/796,228	Applicant(s) HANKS, DARWIN MITCHEL	
	Examiner Aristotelis M. Psitos	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 5-19, 21-37 is/are rejected.
- 7) ☐ Claim(s) 3, 4 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's response of 1/8/07 has been considered with the following results.

Information Disclosure Statement

The submitted IDS has been reviewed and made of record.

The indicated allowability of claims 1-37 is withdrawn in view of the newly discovered reference(s) to Dickey, and additional references cited below. Rejections based on the newly cited reference(s) follow.

Errata

The examiner segregates the claims as follows:

- a) claim 1 : base drive ckt, included in claim 12,
- b) claim 2, claim 16: actual error calculation element,
- c) claim 3, claim 20: further limitations with respect to the actual error calculation element,
- d) claim 6, claim 21, claim 29: sinusoidal calculation element,
- e) claim 7, claim 22, claim 30: sine & cosine generators,
- f) claim 8, claim 23: feedback factor description,
- g) claim 9, claim 24, claim 31: coefficient factor description,
- h) claim 10 claim 25, claim 32 new total error signal description,
- i) claim 11, claim 26, claim 28, claim 33: driving function described,
- j) claim 27 method of claim 12.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1,5-8,10-13, 21-23,25,26,27, 28, 29,30, 32,33 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickey further considered with Supino.

The following analysis is made:

Claim 34:	Dickey
An error correction circuit for determining an error in rotational speed of a recordable disk of a disk drive, comprising:	see abstract/title & Supino
means for generating a true oscillation error signal;	hall elements 32 & 34
<u>means for providing a spindle error signal;</u>	<u>element 30</u>
and means for combining the true oscillation error signal with a the spindle error signal to generate a total error signal.	overall effect/operation see below

Dickey discloses in the motor environment the ability of providing an error signal from the spindle motor and feeding such an electrical signal as the input to the appropriate hall elements 32 & 34. These then feed the diff. Amplifiers 36 & 38 and subsequent circuit elements as depicted in figures 2/3/ 4 or 5. As far as the claim recites positive elements, the examiner concludes that the error signal is combined with the sinusoidal signals, which are interpreted as the claimed true oscillation error signal.

The motor is not necessarily used with a disc drive, nor is it clearly depicted of a summation, although the error signals are fed to appropriate hall elements.

Supino teaches a motor control system in the disc drive environment as well as feeding an error signal into an appropriate summation device for generating an appropriate correction to reduce run-out. Although the error is on the position of the transducer, obviously motor errors as disclosed in Dickey also occur.

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It would have been obvious to modify the base system of Dickey and modify it with the above teaching from Supino, motivation is to use an appropriate motor control system for disc drives which use motors to ensure proper motor control, as well as the summation element as part of the control servo/loop.

With respect to claim 35, the appropriate sine and cosine signals are generated by the hall element arrangement, the adapter algorithm means is interpreted as the multiplier effect/elements as discussed with respect to figure 1, and the summation means is interpreted as the output of elements 44 and 46.

With respect to claim 36, such a factor is present.

Claim 1 parallels claim 34 above and the same analysis is made.

With respect to claim 12, this includes appropriate photodetectors, etc, and applicant's attention is further drawn to the discussion of such figure 5 of Dickey.

With respect to claim 5, such a configuration is present.

With respect to claims 6-8, 21-23, 29 and 30, the sine, cosine signals generating elements, the multiplication and summation is considered present in the Dickey reference. If applicant can convince the examiner that such is not present, then the reliance upon the teaching from Boden et al – see the discussion below with respect to claims 9 and 37 will be made.

With respect to claims 10, 11, 25, 26, 28, 32 and 33, such driving is the end result of the combined references.

With respect to claim 13, such is discussed in Dickey.

The method limitations of claim 27 are met when the above combined systems operate.

2. Claims 9, 24, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claims 34-36 above, and further in view of article to Bodson et al.

With respect to claims 9, 24 and 37, as noted in the above Bodson et al article (applicant is thanked providing such), the discussion with respect to the section entitled "Adaptive algorithm", section 3

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discusses the multiplication. The examiner concludes that the appropriate multiplication factor is hence taught. It would have been obvious to modify the base system of Dickey with such a teaching, motivation is as discussed in the Bodson et al article.

3. Claims 2, 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as relied upon above with respect to claims 1 and 12 and further considered with Volz et al.

There is no clear depiction of a reference speed in the control circuitry. Nevertheless, the use of a target speed/reference speed in this environment is taught by the Volz et al reference.

It would have been obvious to modify the base systems as relied upon with respect to claims 1 and 12 and further modify such with the additional "target" speed reference so as to ensure the speed operation is within a desired target range and prevent run-away of the motor.

With respect to claims 16-19, such is the operation of the photosensors in Dickey.

4. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 12 above, and further in view of Gotoh et al.

With respect to the ability of incorporating the encoding wheel on, integral with the disc itself, the ability of providing for bca areas on a disc are well known as taught by the Gotoh et al reference.

It would have been obvious to modify the base systems as relied upon above with respect to claim 12 and further modify such with the above noted bca teaching from Gotoh et al, motivation is to reduce the overall footprint of the system by incorporating the encoding capability in/on the disc itself as opposed to a separate element as known by Dickey et al.

5. Claims 3,4, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These limitations are not found/taught in the above cited art.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art is cited as illustrative of prior art compensation systems in this environment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M. Psitos whose telephone number is (571) 272-7594. The examiner can normally be reached on M-F: 6:00 - 2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aristotelis M Psitos
Primary Examiner
Art Unit 2627



AMP